ALTA DITCH AND CANAL COMPANY

In the early months of 1875, springs were discovered at Guard Quarters, about three miles above the mouth of Provo Canyon. (Guard Quarters was the remains of a stone house built by Mormon militia where they watched for the possible entry of Johnston's Army into the valley.) A group of men were looking for water in the area when they heard the sounds of an underground stream beneath their feet. They dug a tunnel into a ledge and discovered the stream source which was between two and three hundred feet above the bottom of the canyon. They named the new water supply Alta Springs.

The same year workers began digging a ditch to channel the water to farm land. It took ten years to complete the project. It skirted the side of the canyon and entered the valley about a quarter of a mile northwest of the mouth of the canyon. At this point the water went down a rocky ravine to the land on the bench. It then followed a northwest course for two miles and watered three hundred acres of land above the Provo Bench Canal. This land was planted mostly in orchards.

The Alta Ditch and Canal Company was incorporated in 1893. In 1957, Orem City secured an agreement with the Alta Ditch and Canal Company through which Orem traded irrigation water owned by the city to the Alta Ditch and Canal Company; in exchange, Orem City received water from the Alta Springs for its culinary system

BLUE CLIFF CANAL

In 1885 a group of farmers living between the mouth of Provo Canyon and Pleasant Grove formed the Blue Cliff Canal Company for the purpose of constructing and controlling a canal to distribute water from the Provo River. The canal emerged onto the bench a short distance below the Alta Ditch Canal. Because of construction difficulties, no water was run into the canal until 1901. The company had a

Blue Cliff Canal Company.

The Provo Reservoir Company maintained that a lot of water flowing from canals and ditches into Utah Lake was being wasted and therefore, subject to appropriation. The Provo Bench Canal and Irrigation Company and Provo City opposed this view, so the matter went to court in 1916. The Provo Reservoir Company won the case and received the rights to use water from the Provo River in their new canal.

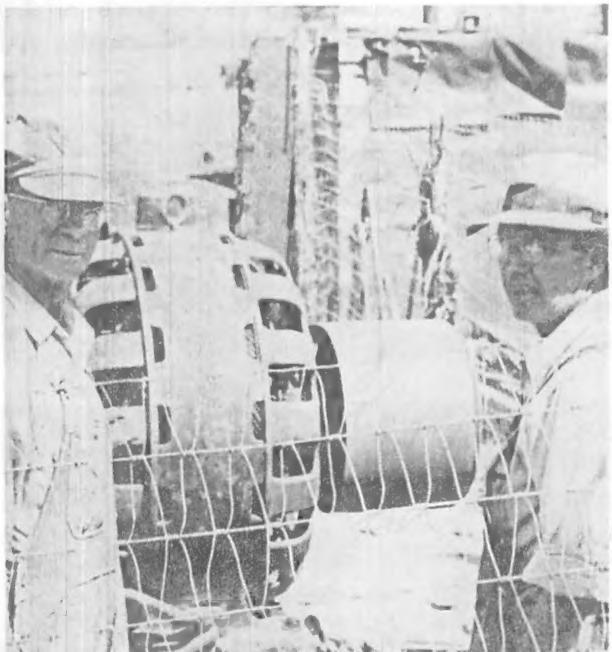
The canal built by the Provo Reservoir Company became known as the Murdock Canal, named after Joseph R. Murdock, the founder of the company. Water was first turned through this canal in 1910.

The company constructed reservoirs at the head of the Provo River for water originating there and thus secured four thousand two hundred acre feet of water. It secured water from the Weber River and built a diversion canal to transport it. It built a canal from about a mile above the mouth of Provo Canyon northward through Utah Valley, skirting the foothills to the Jordan Narrows near Point of the Mountain. There it constructed a pumping plant and put two pumps into operation to carry the water in a concrete and steel pipe west across the Jordan Narrows where it was released from the pipe into two canals leading to farming districts, one branch running south into Utah County, a distance of about eight miles, and the other running north into Salt Lake County to a point west of Murray. Some 2,660 shares of Provo Reservoir Company water are now used on Provo Bench.

The Murdock Canal was later purchased by the Bureau of Reclamation as part of the Deer Creek Project. It now carries water from Deer Creek Reservoir as well as water from the Provo Reservoir Water Users Company, the successor to the Provo Reservoir Company. Because of several exchanges and agreements, the canal now carries water for several other companies also.

MUNICIPAL WELLS

Orem City now has six wells which pump water into two 3,000,000-gallon tanks on a hill at the base of Timpanogos. A higher tank stores 2,000,000 gallons of



MUNICIPAL WELL, 1946: Jim Blair and Willard Pierce. *Courtesy Mrs. Willard Pierce.*

pure water from canyon springs. All water flows into the city water system through 134 miles of pipe to 40,000 people. During the month of July 1976, Orem residents and industries used 465,540,000 gallons of water or 11,389 gallons per person. Orem City leaders plan to fill the water needs of future citizens with one-third of the supply coming from wells, one-third from springs, and one-third from storage.

No wells may now be dug without the permission of the State Engineer. This regulation is to protect current well owners whose supplies might dry up if too many taps are made on the same underground stream. For this reason, Orem City wells go below the water-bearing strata that supplies adjacent cities; the wells are between five hundred and one thousand feet deep. Today's wells are very different from those dug by Alf Skinner. They are located by a geologist instead of a water witch, and a drill does the digging and lays the pipe.

Orem City now buys all the irrigation water of good title that is for sale within its boundaries. It becomes part of the culinary supply as soon as it is purified. Until then, it is rented out by the city to pay for various costs incurred.

LITIGATION

In 1851, cities had been given control of irrigation water in their charters. From then on Provo City exercised full control over the Provo River from the mouth of the canyon to the lake. Provo City often questioned means of measurement and apportionment between interests. In 1882, Provo City sued one of its own citizens, Newel Knight, a superintendent of the Provo Bench Canal and Irrigation Company for taking and using water from the Provo River without the authority of the water master. Since the Provo Bench Canal and Irrigation Company Trustees had directed Mr. Knight to take the water, they authorized him to get legal help. The Provo Bench Canal and Irrigation Company won the case.

Before 1880, water was appurtenant to land and was the property of the Territory of Utah. The Territorial legislature of 1880 changed this by making water personal property that could be bought and sold. Irrigation districts were reorganized as water stock companies where water could be used for speculation or any other reason. The State could not intervene to protect public rights or to protest excessive grants. Judges knew very little about irrigation matters, so when cases were brought before them in court, they frequently granted more water than was available. As a result, streams were over-appropriated which eventually rendered some water rights worthless.

In 1884, a convention of all Provo River interests was called at Heber City to consider better management of water distribution. A tentative agreement was reached, but it proved unsatisfactory. In 1894, Provo City filed suits against various canal companies that were never brought to trial.

In 1901, legislative change was made in an effort to define rights. The State was divided into divisions, each headed by a superintendent who had been

originated in the area adjacent to the Murdock Diversion Dam. Other springs in that same area now furnish Orem with water. The pipes follow the old railroad tracks for a distance, go up and over the west hill, and drop the water into the city's storage tank.

DEER CREEK RESERVOIR

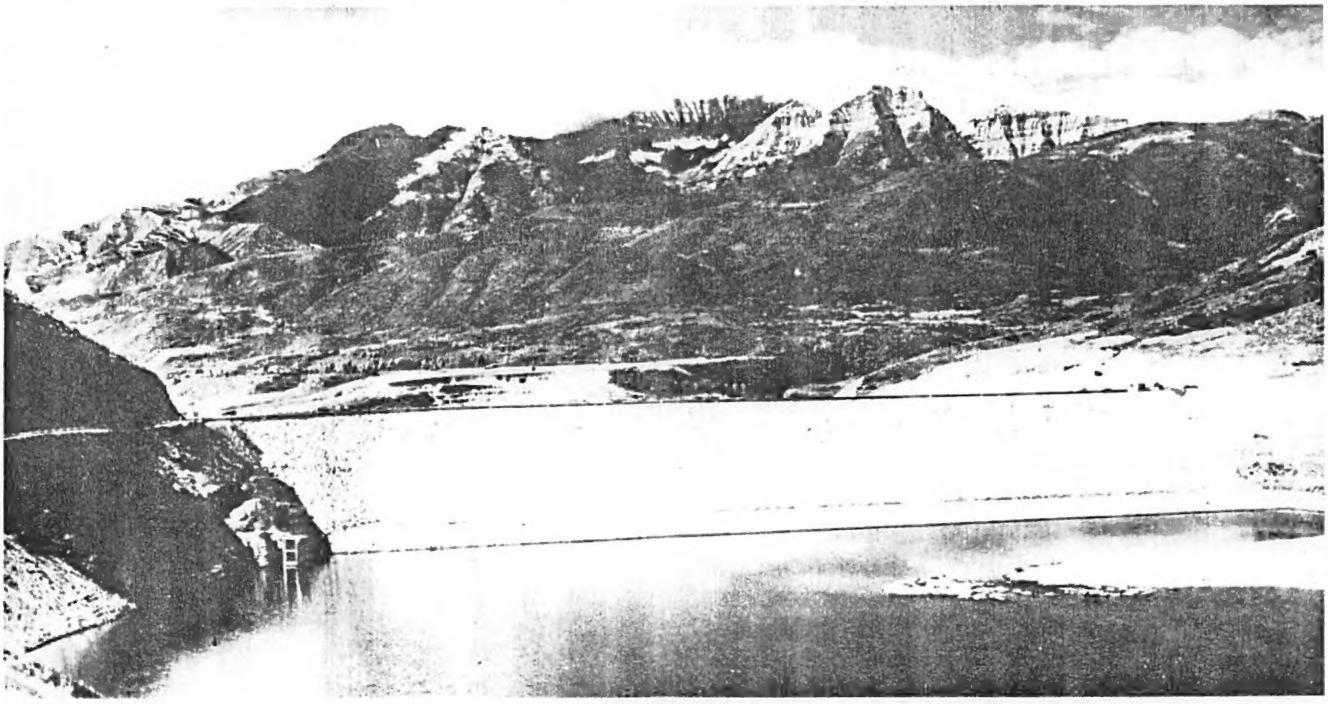
The key structure of the Provo River system now is the Deer Creek Dam located about twelve miles northeast of Provo Bench in Provo Canyon. It was completed by the Bureau of Reclamation in 1941. Weber River water and Duchesne River water, plus some of Provo River's high water, is stored in Deer Creek Reservoir. When Deer Creek Reservoir is full, its Weber and Duchesne sources are cut off. The stored water of this reservoir is used mostly for culinary and industrial use. On the bench, 2,254 acre-feet go to the Metropolitan Water District of Orem; 2,000 acre-feet go to the Provo Bench Canal and Irrigation Company; and 1,600 acre-feet go to the Provo Reservoir Water Users Company. Deer Creek stockholders may use more than they own if they can buy from another stockholder who has more than he needs for the season.

If it were not for the Deer Creek Reservoir Project, Orem would have stopped growing in 1940. Neither Geneva Steel Plant nor any of its related industries would have been built. When Reed Smoot was senator, building such a dam was considered necessary by government and community leaders. Plans were made in the 1930s during the depression. It was estimated that the reservoir could be built for about $7,000,000 repayable in forty years without interest.

The matter of persuading companies and cities to sign the government contracts for repayment of construction costs, operating procedures, and losses in case of default, might never been accomplished but for the work of Attorney Arthur V. Watkins. He and Provo City Engineer, Elmer A. Jacob, volunteered their services, without pay, and spent many months persuading individuals and groups that they had everything to gain and nothing to lose by incurring this government indebtedness.

As subscriptions for water were solicited, it became obvious that agricultural wealth was not sufficient to pay the government obligations off over a forty-year period. It was then that Arthur V. Watkins conceived the idea that cities and towns could subscribe for water through Metropolitan Water Boards. A number of towns and cities in Utah County were very hesitant to create these boards. They felt that they had sufficient water for the future; but, today they are sorry they did not participate more fully.

Provo City subscribed for 8,000 acre feet; American Fork, Pleasant Grove, and Lehi each subscribed for 500 acre feet; Orem could qualify only for 2,240 acre feet because of it's low assessed valuation. Provo Reservoir Water Users Company subscribed for 16,000 acre feet which was the largest agricultural subscription. Provo Bench Canal and Irrigation Company subscribed for 800 acre feet.



DEER CREEK RESERVOIR
Courtesy BYU Archives

When there were still more subscriptions available, Salt Lake City agreed to pay the additional amount. In later years, when every little company and city in the area was begging for more Deer Creek water, Salt Lake City was blamed for taking the surplus.

The cost of building the reservoir increased steadily because of delays and inflation. Even though the final cost was more than three times the original estimate—$24,000,000 or $240 an acre-foot, Deer Creek Reservoir is still the cheapest and surest water supply in the area.

The completion of the Deer Creek Reservoir fulfilled a prophecy of Brigham Young as recorded in the diary of Ben H. Bullock:

> Some day an earthen dam will be constructed in Provo Canyon across the Provo River making a large reservoir, and water will be take from this reservoir around the foothills of this valley into Salt Lake Valley and the people of Salt Lake City will get much of their supply of water from this source.

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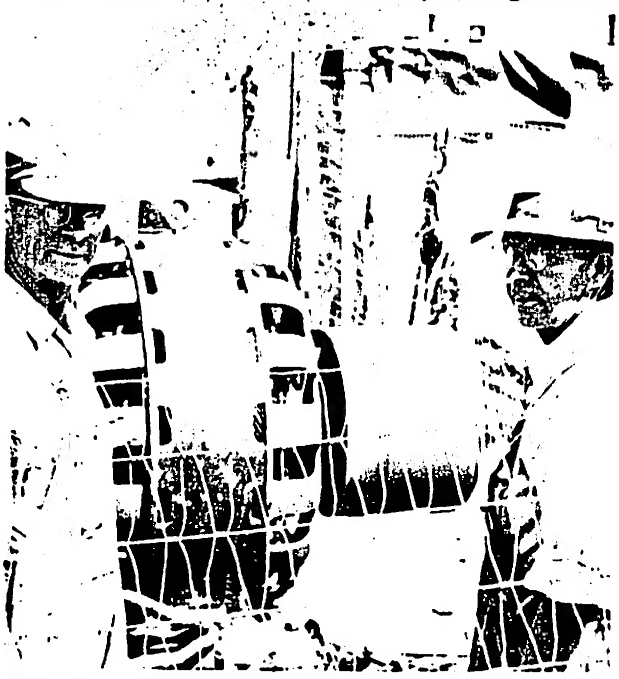

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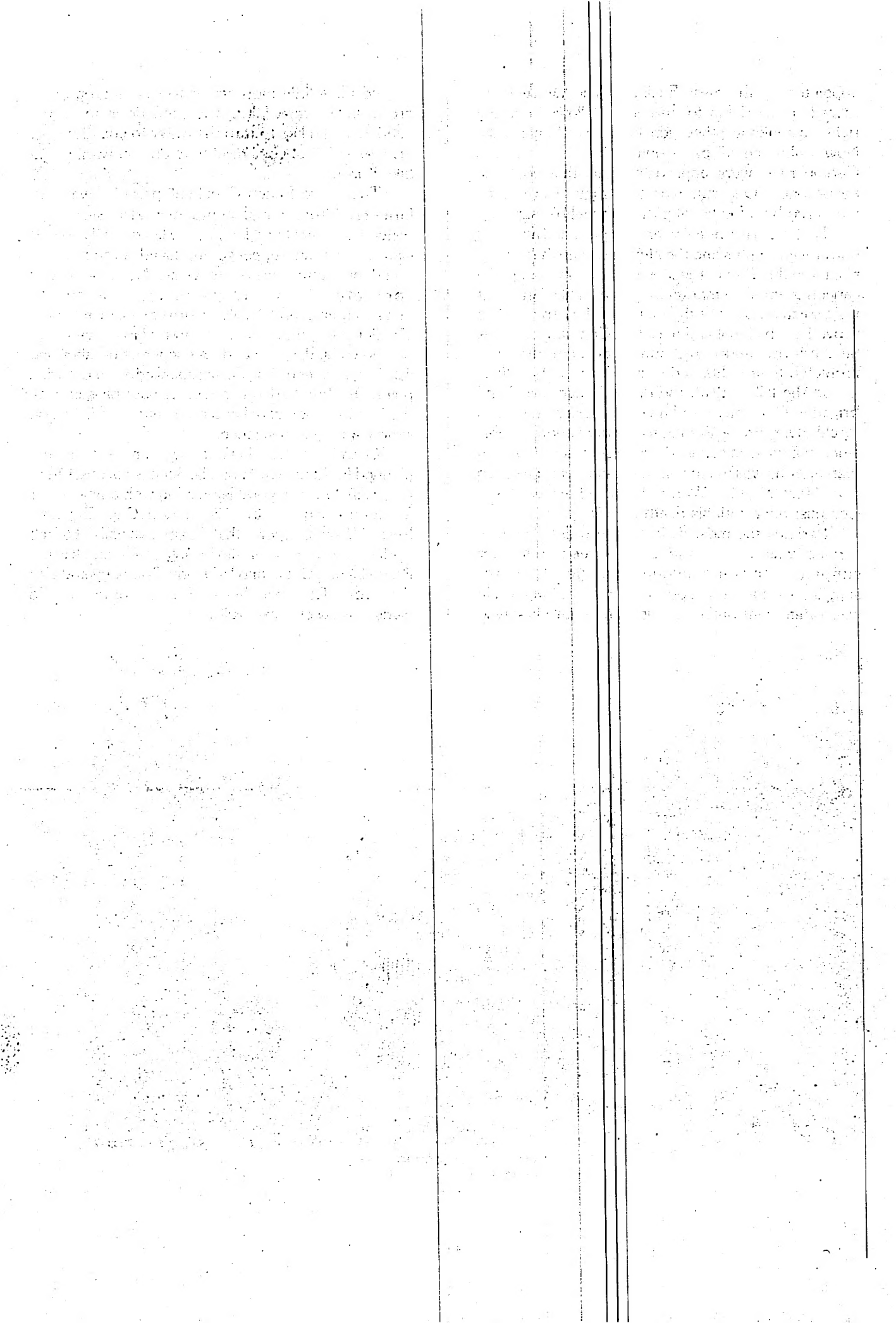
OLD WATER FLUME, PROVO CANYON
Courtesy Theresia Clayton Pyne



The Journal History of the Church of Jesus Christ of Latter-day Saints for Tuesday, 26 October 1858 indicates that General Johnston was invited to move his troops from Camp Floyd to the Provo Bench:

> A company of merchants and campfollowers have gone to establish a city on the Provo Bench to be called Centre City. It is reported that they have invited General Johnston to locate a military post there, and move in the spring with his troops.
>
> Governor Cumming requested President Young to send men to occupy all the land. The president [Brigham Young] said he did not wish to interfere, but would let them build a city, it will be a long time first, unless they get the "Mormons" to build it for them, and then they would cheat them out of their pay; he would like them to get the apostates to build the city for them.

A military post was not established on Provo Bench. Eventually, Johnston's troops left Utah, and the Salt Lake City residents moved back to their homes. Because their settlement in Utah Valley was temporary, these people had little economic effect on the benchland area.

The Nauvoo Legion, which had been partially reorganized in Utah on 27 March 1852, used the bench for their military drills. Andrew Jenson, LDS Church historian, wrote in his autobiography:

> In October 1870, I had my first experience in military training, a county military drill being held at Camp Burton, located on the so-called Dry Creek, on the Provo Bench, about four miles southeast of Pleasant Grove. About 4,000 men were gathered from different parts of Utah County, and the drill was carried out with strict discipline and order. This was a part of the annual drilling of the Nauvoo Legion. I rather enjoyed the exercises and at once felt a desire to train as a soldier and aspire to become an officer in that military organization. This, however, was not to be in my case, for after two more annual drills, which I attended and enjoyed, orders were given by Acting Governor Shaffer of Utah for the "Mormons" to cease their military evolutions.

On 30 July 1870, Fort Rawlins, a temporary military fort was established on the bench two and one-half miles north of the Provo River. The military was stationed there to protect Provo citizens from Indians, but a permanent fort was never built. For several reasons, the temporary fort was closed down by June 1871.

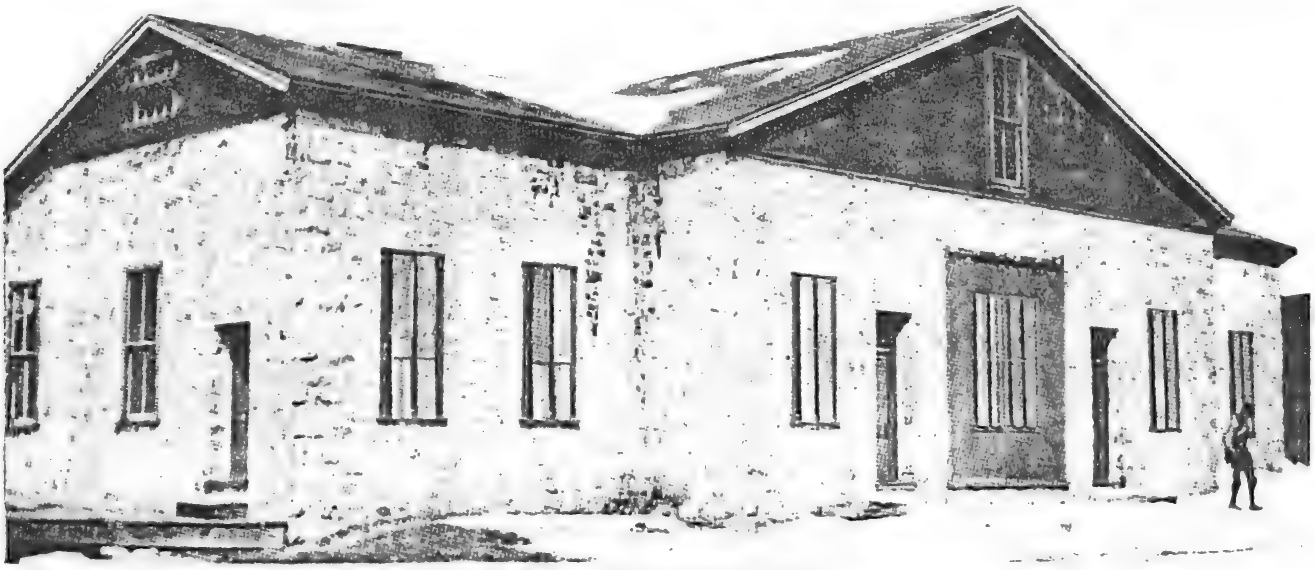
Fort Rawlins was undesirable from the viewpoints of the command and the soldiers. There was poor communication with higher command and the facilities were poor. Contempt from the townspeople worsened these problems to the point of open rebellion among some 20 of the 40 soldiers stationed at the fort.

On 22 September 1890, drunken soldiers marched prominent Provo men down West Main Street at gunpoint. Besides the verbal abuse inflicted on these men, property damage was incurred by other citizens whose houses were shot at by the passing soldiers.

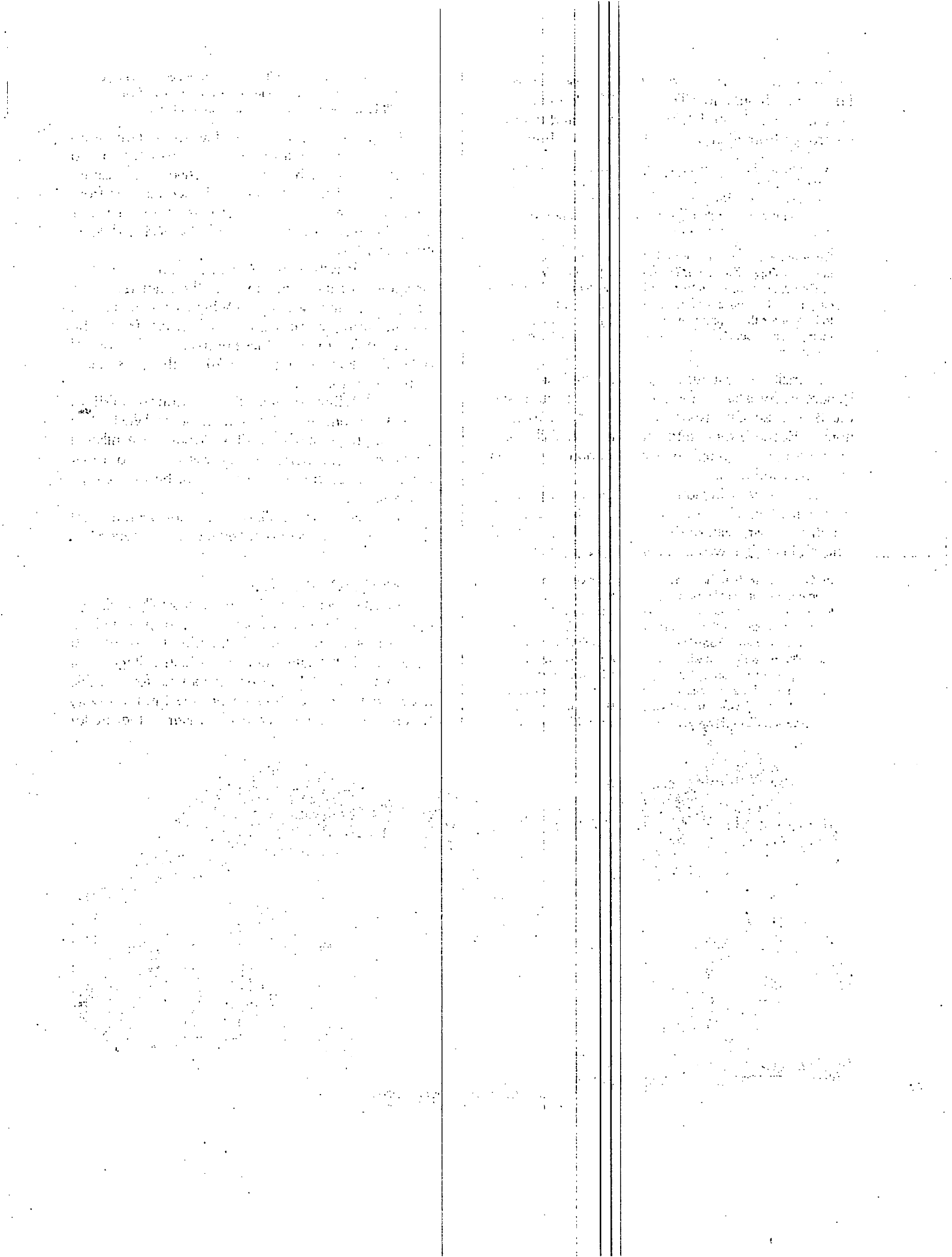
Because Fort Rawlins existed for such a short time, it had little economic effect on the benchland area.

HYDROELECTRIC POWER

In 1890, Mr. L. L. Nunn successfully built and operated the first industrial hydroelectric power plant, the Ames Plant, near Telluride, Colorado. It transmitted alternating current at high voltage three miles away. In 1894, he began looking for possible hydroelectric power sites farther west in the Rocky Mountains. He chose the Provo River as the site for



NUNN'S STATION, PROVO CANYON
Courtesy Utah Power and Light Company



the Nunn's Station which was operational in 1897. By the next year the turbine provided 750 kilowatts of power to a gold mine and a mill in Mercur, Utah, thirty-two miles away. This was a milestone in the history of electrical transmission because this electricity was being transmitted by the first 44,000-volt transmission line built in the United States.

In 1900, the Telluride Power Company was formed. The Nunn's Station was soon replaced by the Olmstead Plant which became operational in 1904. It supplied surrounding areas and increasingly distant areas (no farther than 50 miles away) with electricity.

The Olmstead Plant was unique in that it was equipped to provide on-the-job training in electrical

OLMSTEAD PLANT
Courtesy BYU Archives

engineering for its employees. Mr. L. L. Nunn conceived this company-employee relationship. His brother, Paul Nunn, directed the program, also used at other plants, that eventually became the Telluride Institute. The Telluride Association, as it was named in 1911, is presently seated at Cornell University. The impact, though, of that early program is remarkable. At the time, the Olmstead Plant offered the only competent training program in electrical engineering besides the program taught at Ohio State. Some young men from the bench area were trained under this two-year program and became outstanding engineers.

In 1912, Utah Power and Light Company was formed; it purchased the Telluride Power Company, which included the Olmstead Plant. This plant is still operated under the direction of Utah Power and Light Company.

TRANSPORTATION

State Street in Orem was originally established as part of the great corridor highway that linked Salt Lake City with Southern Utah and California. State Street opened for travel in the 1850's, was eight rods wide and ran between what is now 2000 South and 2000 North in Orem. What originally was a dusty, rutted, rocky road in the summer, and a muddy, sloshy road in the winter is now a paved, modern road that is part of U. S. Highway 91.

The transition from buggies and carriages to automobiles did not occur overnight on Provo Bench. The evolution of modern transportation was gradual, yet inevitable and helpful to the benchland. The creaky Model-T's and the fragile trucks that appeared early in the century on the bench can't compare with the cars and diesel trucks that now traverse Utah's highways, but they did increase trade with neighboring towns and cities.

Many roads were graveled in order to strengthen them. The old Provo Canyon Road was graveled in 1911-12. Early settlers hauled loads of rock from their benchland farms to gravel the old Canyon Road. The highway department crushed the rock to make the hard gravel. As transportation improved, trade and commercial activity increased.

By 1910, Provo Bench was becoming a prosperous agricultural community. Accessibility to outside markets inevitably required a railroad. Electrically driven railroads were fairly new, so it is understandable why in 1913 "newspapers of Utah were virtually unanimous in proclaiming the building of the Orem Railroad the biggest event of that year." The Salt Lake and Utah Railroad, or the Orem Line as it was called by many people, was a 67-mile electric rail line financed and constructed by A. J. Orem and Company under the direction of Walter C. Orem. The line from Salt Lake to Provo, which passed through Provo Bench, was opened for electric car service on 24 July, 1913. By 1917, the Orem Line extended from Salt Lake to Payson.

A railroad depot was eventually built in Orem, but because of highway improvements and increased use of automobiles in the 1920's, passenger business declined on the Orem Line. In the 1930's, the line went into receivership, and a foreclosure sale of all properties took place in the first few months of 1938.

A NEW NAME FOR THE BENCH

Some people on the bench recognized the need for an organization that would promote better business conditions. One day in April, 1914, Oscar H. Anderson, a salesman, rode on horseback to nearly every house on the bench trying to get residents to attend a commercial meeting to be held at Parcell's

appointed by the State Engineer. The law required records of all rights to be kept. It allowed existing rights to continue if they were being used beneficially. Now rights could be acquired by appropriation. Certain rules were applied to rights that could be apportioned. One rule was that rights were to be measured by a fractional part of the whole supply.

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